

OCT 01 2007

Serial No. 09/840,426

Docket No.: 02369

**IN THE CLAIMS:**

1. (Currently Amended) An interchangeable piezoelectric lighter, comprising:
  - a casing receiving a liquefied gas storage and having a switcher cavity provided therein;
  - a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;
  - a piezoelectric unit fitted in said casing for generating piezoelectricity;
  - an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to activate said piezoelectric unit when said ignition button is depressed;
  - a gas emitter operatively coupled from said piezoelectric unit;
  - and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two parallel arranged gas nozzles selectively and coaxially aligning with said gas ~~valve~~ emitter for said flow of gas passing therethrough so as to produce different flames;
  - said gas nozzles including a windproof type nozzle and a non-windproof type nozzle;
  - said gas nozzles each including a nozzle head and an inlet communicating with said gas valve;
  - said valve switcher including a lower portion that is exposed through an aperture in said casing to enable exterior manual rotation thereof and an upper portion for supporting each nozzle head;
  - said lower portion of said valve switcher being manually movable in a direction orthogonal to the axis of both said gas nozzles so as to selectively and coaxially align said respective nozzles with said gas ~~valve~~ emitter.
2. (Currently Amended) An interchangeable piezoelectric lighter as recited in claim 1, wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and wherein said gas emitter having has an

Serial No. 09/840,426

Docket No.: 02369

inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles.

3. Canceled

4. (Currently Amended) An interchangeable piezoelectric lighter, comprising:  
a casing receiving a liquefied gas storage and having a switcher cavity provided therein;  
a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;  
a piezoelectric unit fitted in said casing for generating piezoelectricity;  
an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;

a gas emitter operatively coupled from said piezoelectric unit;

and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles that are arranged parallel to a common axis of the casing and selectively and coaxially aligning with said gas valve emitter for said flow of gas passing therethrough so as to produce different flames;

wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a said gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles;

wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

Serial No. 09/840,426

Docket No.: 02369

5. (Currently Amended) An interchangeable piezoelectric lighter, comprising:  
a casing receiving a liquefied gas storage and having a switcher cavity provided therein;  
a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;  
a piezoelectric unit fitted in said casing for generating piezoelectricity;  
an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;

a gas emitter operatively coupled from said piezoelectric unit;

and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles selectively and coaxially aligning with said gas valve for said flow of gas passing therethrough so as to produce different flames;

wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a said gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles;

wherein said valve switcher, which is adapted for coaxially rotating about a common axis of the casing with respect to said gas adapter, comprises three gas nozzles which are a visible gas nozzle, a torch nozzle, and a windproof nozzle axially provided on said valve switcher respectively, so as to selectively align with said gas emitter, each of said three gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter;

wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

Serial No. 09/840,426

Docket No.: 02369

6. (Currently Amended) An interchangeable piezoelectric lighter, comprising:  
a casing receiving a liquefied gas storage and having a switcher cavity provided therein;  
a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;  
a piezoelectric unit fitted in said casing for generating piezoelectricity;  
an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;

a gas emitter operatively coupled from said piezoelectric unit;

and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles selectively and coaxially aligning with said gas ~~valve~~ emitter for said flow of gas passing therethrough so as to produce different flames;

wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a ~~a~~ said gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles;

further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

7. (Currently Amended) An interchangeable piezoelectric lighter, comprising:  
a casing receiving a liquefied gas storage and having a switcher cavity provided therein;  
a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;  
a piezoelectric unit fitted in said casing for generating piezoelectricity;

Serial No. 09/840,426

Docket No.: 02369

an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;

a gas emitter operatively coupled from said piezoelectric unit;

and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles selectively and coaxially aligning with said gas ~~valve~~ emitter for said flow of gas passing therethrough so as to produce different flames;

wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a ~~a~~ said gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles;

wherein said valve switcher, which is adapted for coaxially rotating with respect to said gas adapter, comprises three gas nozzles which are a visible gas nozzle, a torch nozzle, and a windproof nozzle axially provided on said valve switcher respectively, so as to selectively align with said gas emitter, each of said three gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter;

further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

8. (Original) An interchangeable piezoelectric lighter, as recited in claim 5, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for

Serial No. 09/840,426

Docket No.: 02369

rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has a center slot coaxially formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and rotatably inserted into said center slot of said valve switcher.

9. (Original) An interchangeable piezoelectric lighter, as recited in claim 6, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

10 (Original) An interchangeable piezoelectric lighter, as recited in claim 7, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

11. (Original) An interchangeable piezoelectric lighter, as recited in claim 8, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

Serial No. 09/840,426

Docket No.: 02369

12 (Currently Amended) An interchangeable piezoelectric lighter, comprising:  
a casing receiving a liquefied gas storage and having a switcher cavity provided therein;  
a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;  
a piezoelectric unit fitted in said casing for generating piezoelectricity;  
an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;

a gas emitter operatively coupled from said piezoelectric unit;

and a flame interchanging means for selectively interchanging a flame of said piezoelectric lighter, comprising a valve switcher movably received in said switcher cavity, wherein said valve switcher comprises at least two gas nozzles having respective axes and selectively and coaxially aligning with said gas valve emitter for said flow of gas passing therethrough so as to produce different flames;

wherein said flame interchanging means further comprises a gas adapter fitted in said switcher cavity wherein said valve switcher is supported on said gas adapter and a said gas emitter having an inlet end operatively extended from said gas valve and a gas releasing end penetrated through said gas adapter so as to selectively align with one of said gas nozzles;

wherein said valve switcher, which is movably supported on said gas adapter in a direction which is transverse to the nozzle axes ~~horizontally movable manner~~, comprises two gas nozzles which are a visible nozzle and a torch flame parallelly provided on said switcher respectively, so as to selectively align with said gas emitter, each of said two gas nozzles having a nozzle head appearing from a ceiling of said valve switcher and a gas inlet provided on a bottom surface of said valve switcher and adapted for sealedly aligning with said gas releasing end of said gas emitter.

Serial No. 09/840,426

Docket No.: 02369

13 (Original) An interchangeable piezoelectric lighter, as recited in claim 12, wherein said flame interchanging means further comprises a guiding unit for guiding said gas emitter aligned with said respective gas nozzle wherein said guiding unit comprises at least a protrusion upwardly provided on a top surface of said gas adapter and at least a corresponding indentation formed on said bottom surface of said valve switcher in such a manner that said protrusion is fittedly engaged with said indentation when said gas emitter is aligned with one of said gas nozzles.

14 (Original) An interchangeable piezoelectric lighter, as recited in claim 12, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has an elongated guiding slot transversely formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and slidably inserted into said guiding slot of said valve switcher.

15 (Original) An interchangeable piezoelectric lighter, as recited in claim 13, further comprising a supporting frame comprising a central shaft, upwardly extended from said switcher cavity, for rotatably supporting said central shaft and a resilient element coaxially mounted on said central shaft for applying an urging force against said gas adapter, wherein said valve switcher has an elongated guiding slot transversely formed on said bottom surface thereof and said gas adapter has a center through hole coaxially formed thereon in such a manner that said central shaft is penetrated through said center through hole of said gas adapter and slidably inserted into said guiding slot of said valve switcher.



Serial No. 09/840,426

Docket No.: 02369

16 (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 14, wherein said valve switcher has a predetermined length adapted for each of said gas nozzles coaxially aligning with said gas emitter and for reinforcing a displacement of said valve switcher.

17 (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 15, wherein said valve switcher has a predetermined length adapted for each of said gas nozzles coaxially aligning with said gas emitter and for reinforcing a displacement of said valve switcher.

18. (Original) An interchangeable piezoelectric lighter, as recited in claim 14, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

19. (Original) An interchangeable piezoelectric lighter, as recited in claim 15, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

20. (Original) An interchangeable piezoelectric lighter, as recited in claim 17, wherein said resilient element is a compression spring having two ends biasing against a base of said central shaft and a bottom surface of said gas adapter, and wherein said resilient element normally urges and retains said gas adapter in a higher position that said top surface of said gas adapter is tightly

Serial No. 09/840,426

Docket No.: 02369

contacted with said bottom surface of said valve switcher, so as to ensure said gas emitter sealedly aligned with said respective gas nozzle for gas transmitting therebetween.

21 (Currently Amended) An interchangeable piezoelectric lighter, as recited in claim 1, wherein said valve switcher is constructed and arranged to coaxially rotate about a common axis and with respect to said gas valve emitter.

22 (Currently Amended) An interchangeable piezoelectric lighter, as recited in claim 1, wherein said valve switcher is constructed and arranged to move in a direction that is orthogonal to a common axis and horizontally with respect to said gas valve emitter.

23 (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 1, wherein said gas nozzles are of different type.

24 (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 23, wherein said gas nozzles include at least a visible nozzle and a torch nozzle.

25 (Currently Amended) A lighter, comprising:

- a casing receiving a liquefied gas storage and having a switcher cavity provided therein;
- a gas valve operatively extended from said liquefied gas storage for controlling a flow of gas;
- a piezoelectric unit fitted in said casing for generating piezoelectricity;
- an ignition button mounted to said casing in a movable manner, wherein said ignition button is arranged to compress said piezoelectric unit when said ignition button is depressed;
- a gas emitter operatively coupled from said piezoelectric unit;
- and a valve switcher movably received in said switcher cavity;

Serial No. 09/840,426

Docket No.: 02369

wherein said valve switcher comprises at least two side-by-side arranged gas nozzles selectively and coaxially aligning with said gas valve emitter for said flow of gas passing therethrough so as to produce different flames;

said gas nozzles each including a nozzle head and an inlet communicating with said gas valve;

said valve switcher including a lower portion that is exposed through an aperture in said casing to enable exterior manual rotation thereof and an upper portion for supporting each nozzle head;

said lower portion of said valve switcher being manually movable in a direction orthogonal to an axis of both said gas nozzles so as to selectively and coaxially align said respective nozzles with said gas valve emitter.

26 (Currently Amended) An interchangeable piezoelectric lighter, as recited in claim 25, wherein said valve switcher is constructed and arranged to coaxially rotate about a common axis and with respect to said gas valve emitter.

27 (Currently Amended) An interchangeable piezoelectric lighter, as recited in claim 25, wherein said valve switcher is constructed and arranged to move in a direction that is orthogonal to a common axis and horizontally with respect to said gas valve emitter.

28. (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 25, wherein said gas nozzles are of different type.

29. (Previously Presented) An interchangeable piezoelectric lighter, as recited in claim 28, wherein said gas nozzles include at least a visible nozzle and a torch nozzle.